

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
20 January 2005 (20.01.2005)

PCT

(10) International Publication Number
WO 2005/006785 A3

(51) International Patent Classification⁷: **H04L 12/28**

(21) International Application Number:
PCT/IB2004/051211

(22) International Filing Date: 13 July 2004 (13.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/487,423 15 July 2003 (15.07.2003) US
60/541,870 4 February 2004 (04.02.2004) US

(71) Applicant (for all designated States except US): **KONINKLIJKE PHILIPS ELECTRONICS, N.V.** [NL/NL];
Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **ZHONG, Zhun**
[CN/US]; P.O. Box 3001, Briarcliff Manor, NY
10510-8001 (US).

(74) Common Representative: **KONINKLIJKE PHILIPS ELECTRONICS, N.V.**; c/o WAXLER, Aaron, P.O. Box
3001, Briarcliff Manor, NY 10510-8001 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

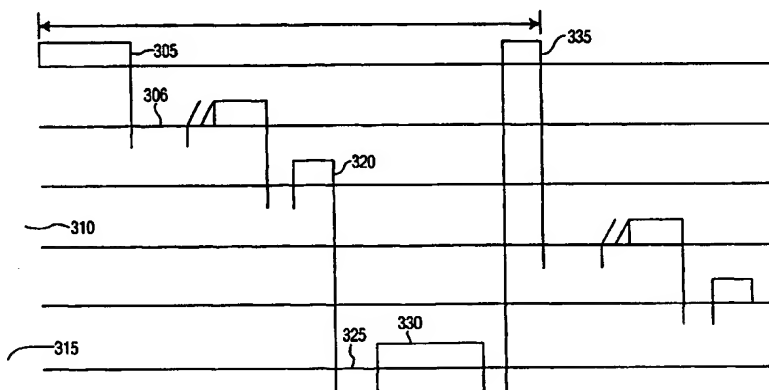
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE,

[Continued on next page]

(54) Title: **METHOD TO ACHIEVE FAST ACTIVE SCAN IN 802.11 WLAN**



(57) **Abstract:** A method for fast active scanning and an Access Point apparatus that reduces the delay in convention active scanning. The method includes the step of giving an AP higher priority to transmit a probe response than is currently known. This priority comes at the delay of transmission of the probe response, so preferably the probe response can be delayed by just the time that the AP needs to prepare the response plus the time, if any, for the frame already in the air to finish. According to the invention, a method can include steps for: sending a uni-cast probe request message by an (STA) 238, 248, 268 on a particular channel having at least one Access Point (AP) 258, 278 in communication therewith; receiving by one particular (AP) 278 the probe request message sent by the (STA); sensing by the particular (AP) 278 of a point coordination function (PCF) interframe space (PIFS) 325 of the particular channel; and sending by the particular (AP) 278 of a probe response message to the (STA) 238 in response to the probe request message after the PIFS. As the probe request is uni-cast, there is no need for a backoff interval as only one AP will respond. Since normal traffic utilizes the longer DIFS space plus backoffs to avoid collisions, the AP will always be able to respond to a probe request of scan faster than other items can respond on the channel, thus giving the AP priority when sending the probe response message.

WO 2005/006785 A3

- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.